

# Site Characterization and Monitoring Technologies

## An ETV Program

### About the Site Characterization and Monitoring Technologies Pilot

The U. S. EPA has partnered with Oak Ridge National Laboratory and Sandia National Laboratories to conduct verification testing of environmental characterization and monitoring technologies. Commercial-ready technologies are evaluated to provide potential technology users and permittees with an independent and credible assessment of technology performance. The verification process includes the development of formal test protocols, and findings are reported in verification statements that are signed by the EPA. The Site Characterization and Monitoring Technologies Pilot is one of many pilot programs organized under the U. S. EPA Environmental Technology Verification Program.

### Program Benefits

The Site Characterization and Monitoring Technologies Pilot benefits technology developers and vendors, purchasers and users, regulators, and the public. Independent, third-party verification testing assures high-quality, consistent, applicable and widely-accepted testing procedures. Specific benefits include:

#### *Developers and Vendors*

- ✓ Provides access to third-party expertise in instrument performance requirements and verification testing.
- ✓ Reduces the number of verification tests needed for technology acceptance and use by multiple states and localities
- ✓ Third-party testing results are a sound marketing tool.
- ✓ Increased confidence to investors, stockholders, and lenders.
- ✓ Accelerates the acceptance of innovative technology in the marketplace.

#### *Technology Users*

- ✓ Provides objective performance data.
- ✓ Provides a means of evaluating competing technologies.
- ✓ Substantiates and supports technology selection and purchase.
- ✓ Facilitates the permitting process.
- ✓ Increases the visibility and availability of technologies that meet user needs.
- ✓ Reduces financial risk to purchasing agents and corporations.

#### *Regulators and the Public*

- ✓ Increases regulator confidence in the innovative technologies proposed for use.
- ✓ Provides an objective basis for decision-making and a fast track to compliance.
- ✓ Promotes the use of cost-effective technology, thereby saving public funds.
- ✓ Forms the basis for state-reciprocity agreements, thereby increasing national uniformity in the deployment of characterization and monitoring technologies.

### Application Areas

Technology verification activities in this program are applicable to a variety of environmental applications. Included are:

- ✓ Superfund site characterization and monitoring
- ✓ Brownfields site investigations
- ✓ Site characterization associated with real estate transactions
- ✓ Toxic chemical release emergency response

### Verified Technologies

Verification testing has been completed or is underway in a number of environmental monitoring technology categories that include:

- ✓ Cone penetrometer-mounted sensors for rapid site characterization
- ✓ Soil sampling technologies
- ✓ Field-portable x-ray fluorescence analyzers
- ✓ Field-portable gas chromatograph/mass spectrometers
- ✓ Wellhead monitoring technologies for chlorinated volatile organic compounds
- ✓ On-site polychlorinated biphenyl test kits
- ✓ Site characterization decision support software tools
- ✓ Groundwater sampling technologies (in process)
- ✓ Field-portable explosives detection technologies (in process)
- ✓ Geophysical technologies for site characterization (in process)

## Verification Process

Each technology demonstration follows a similar process that includes the steps listed below. To the fullest extent possible, vendor participation is encouraged during the demonstration planning stages.

- ✓ User-community needs identification
- ✓ Technology solicitation and selection
- ✓ Demonstration planning
- ✓ Field demonstration
- ✓ Reporting of results
- ✓ Information outreach

## Outreach Activities

The program draws upon the user community through periodic stakeholder meetings to identify and prioritize present and future technology needs. All test protocols and testing results are readily available via the internet ([www.epa.gov/etv](http://www.epa.gov/etv)).

## About the ETV Program

The Site Characterization and Monitoring Technologies Pilot is one of twelve pilot programs organized under ETV and managed by EPA's Office of Research and Development. ETV was created to substantially accelerate the entrance of new environmental technologies into the marketplace by supplying technology buyers, developers, consulting engineers, states, and EPA regions with high-quality, credible data on the performance of new technologies verified through neutral, third-party testing under the direction of the EPA. Other ETV pilots cover the following sectors:

- ✓ Drinking Water Systems
- ✓ Pollution Prevention/Waste Treatment
- ✓ Pollution Prevention/Metal Finishing
- ✓ Pollution Prevention/Innovative Coatings
- ✓ Indoor Air Products
- ✓ Advanced Monitoring Systems
- ✓ Air Pollution Prevention and Control
- ✓ EvTEC (an independent private-sector approach)
- ✓ Wet Weather Flows Technologies
- ✓ Source Water Pollution Technologies
- ✓ Climate Change Technologies

For more information, point your Internet browser to:

**[www.epa.gov/etv](http://www.epa.gov/etv)**

*For more information about the Site Characterization and Monitoring Technologies Pilot*

Access our web site at  
[www.sandia.gov/etv](http://www.sandia.gov/etv)

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